

FISHERIES MANAGEMENT AND EVALUATION PLAN

Middle Columbia River DPS

Walla Walla River

Summer Steelhead and Trout Fisheries

**Prepared by
Oregon Department of Fish & Wildlife**

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Fishery Management and Evaluation Plan

Middle Columbia River ESU

Walla Walla River Sport Fisheries

Responsible Management Agency.

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SECTION 1. FISHERIES MANAGEMENT

1.1) General objectives of the FMEP.

The general objective of this FMEP is to conduct a consumptive fishery on hatchery steelhead and a non-consumptive sport fishery on wild summer steelhead and trout consistent with recovery of the ESA listed steelhead. This FMEP includes all freshwater sport fisheries that affect or could potentially affect the survival and recovery of listed steelhead in the Oregon portion of the Walla Walla subbasin.

1.1.1) List of the “Performance Indicators” for the management objectives.

The abundance performance indicator is the 6-year average wild adult steelhead escapement of at least 220 unmarked naturally produced steelhead as measured at Nursery Bridge Dam. This goal is approximately 2 times the interim viable threshold as described in Section 1.3.1. The long-term escapement goal for wild steelhead in the Oregon portion of the Walla Walla is 658 fish. This level of escapement, 658, is expected to result in the maximum production of wild fish.

The impact of this fishery, plus those in the Washington portion of the Walla Walla subbasin, and mainstem Columbia River shall not cause more than a 20% cumulative mortality rate on wild Walla Walla steelhead returning to Oregon. To accomplish this objective, the sport fisheries within the Walla Walla subbasin will be managed to limit the mortality impact on wild steelhead to less than 5% of the total population. As described in Section 1.4.1 of this plan, **it is estimated that angling related mortality in the Walla Walla subbasin is less than 2% of the population annually.**

1.1.2) Description of the relationship and consistency of harvest management with artificial propagation programs.

Harvest Management

The steelhead sport fishery Walla Walla River in Oregon was closed in 1995 due to consecutive years of low abundance in the early to mid 1990s. Prior to 1995, the mainstem of the Walla Walla River was open from the state line up to the confluence of the North and South forks. The season was open from December 1 through March 31 and the bag limit varied over the years from one fish/day – ten/year, to two fish/day – ten/year, and finally two fish/day – 40/year. A steelhead season was reestablished on the Walla Walla River in 2002 and allowed only the harvest of adipose fin-marked steelhead. Currently (2006 Regulations), the steelhead fishery is open from January 1– April 15 and December 1 – December 31 mainstem Walla Walla River from the Oregon/Washington border upstream to the confluence of the North and South forks. The bag limit is 3 adipose fin-marked steelhead per day, no annual bag limit.

Under this FMEP, ODFW proposes to maintain the selective steelhead sport fishery which allows harvest of hatchery origin steelhead and catch and release angling on wild steelhead. The angling season and special regulations would remain the same as those currently in place (described above).

Prior to the 1995 angling closure, ODFW had only three run years of complete adult escapement data on this population. With the apparent downward trend of adult returns, and relatively low numbers (300-500 adults), the Department took a conservative approach and closed the season. The intent at the time was to collect more biological information (continue enumerating adult returns at Nursery Bridge Dam) and develop fishery management plan based on biologically defensible escapement objectives.

Even though current data is not sufficient to conduct PVA analysis, we think it is adequate to establish escapement goals and allow a selective steelhead fishery based on the assessment described in this plan.

Artificial Production Programs

There is currently no artificial production program for summer steelhead (or resident trout) in the Oregon portion of the Walla Walla subbasin. While the Confederated Tribes of the Umatilla Indian Reservation previously proposed a steelhead artificial propagation program, it is not currently under consideration.

Fisheries management in the Washington portion of the subbasin is managed to provide escapement objectives of 900 returning adult hatchery-origin steelhead to the Walla Walla River and 750 adult hatchery-origin steelhead to the Touchet River, as delineated in the Lower Snake River Compensation Plan (LSRCP) (WDFW 2001). These management objectives are mitigation measures authorized by Congress to compensate for the loss of fisheries that resulted after the construction of the four lower Snake River dams. The Washington Department of Fish & Wildlife (WDFW) management objective is to harvest as many of these hatchery-origin fish as

possible. All hatchery steelhead are externally marked prior to release; therefore, all steelhead fisheries are selective to hatchery-origin fish only. Creel surveys conducted from 1997 to 2000 indicate that approximately 27% of the steelhead caught in recreational fisheries in the Washington portion of the Walla Walla basin are wild-origin steelhead. Wild steelhead release regulations, area closures, and gear restrictions are used to protect fish during recreational fisheries in the subbasin.

The Lyons Ferry stock used for the Washington LSRCP program has been deemed by NMFS (NOAA Fisheries) to not be necessary for recovery, and use of this stock has been declared as a jeopardy (NMFS 1999) to the Walla Walla basin wild steelhead (WDFW 2001). Therefore, a new indigenous broodstock for the Touchet River hatchery program is being developed by WDFW. This program will be phased in over a period of years to replace the Lyons Ferry hatchery stock in the Touchet River. Replacement of Lyons Ferry hatchery stock for release into the Walla Walla River is problematic until a determination is made as to whether wild steelhead in the Touchet, upper Walla Walla and upper Mill Creek should be considered one stock or more than one stock (WDFW 2001).

1.1.3) General description of the relationship between the FMEP objectives and Federal tribal trust obligations.

The Oregon Department of Fish & Wildlife (ODFW) and the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) co-manage anadromous fishery resources in the Walla Walla Subbasin. Anadromous sport fishery angling regulations are developed on a consensus basis with the CTUIR.

Because the Walla Walla anadromous fishery restoration programs are jointly implemented by ODFW, WDFW and CTUIR, agreement and cooperation on behalf of the CTUIR is necessary to implement this FMEP. The ODFW and CTUIR are currently in agreement regarding artificial propagation of steelhead, as no program is currently proposed.

This plan does not address in-river tribal harvest. Tribal harvest will be included in other agreements or plans. Harvest impacts proposed in this FMEP will be consistent with and will not preclude proposed future harvest of Walla Walla River steelhead by tribal co-managers. The actions and objectives of this FMEP are subject to and are consistent with provisions of the Columbia River Fish Management Plan (*US v Oregon*).

1.2) Fishery management area(s):

1.2.1) Description of the geographic boundaries of the management area of this FMEP.

The management area covered under this FMEP is the Walla Walla subbasin South of the Oregon/Washington state line, except Dry and Pine creeks, which are accessible to steelhead, but are not known to have significant reproducing populations due to poor habitat conditions (Figure 1).

1.2.2) Description of the time periods in which fisheries occur within the management area.

Summer Steelhead: December 1 – April 15

Redband Trout: Fourth Saturday in May to October 31

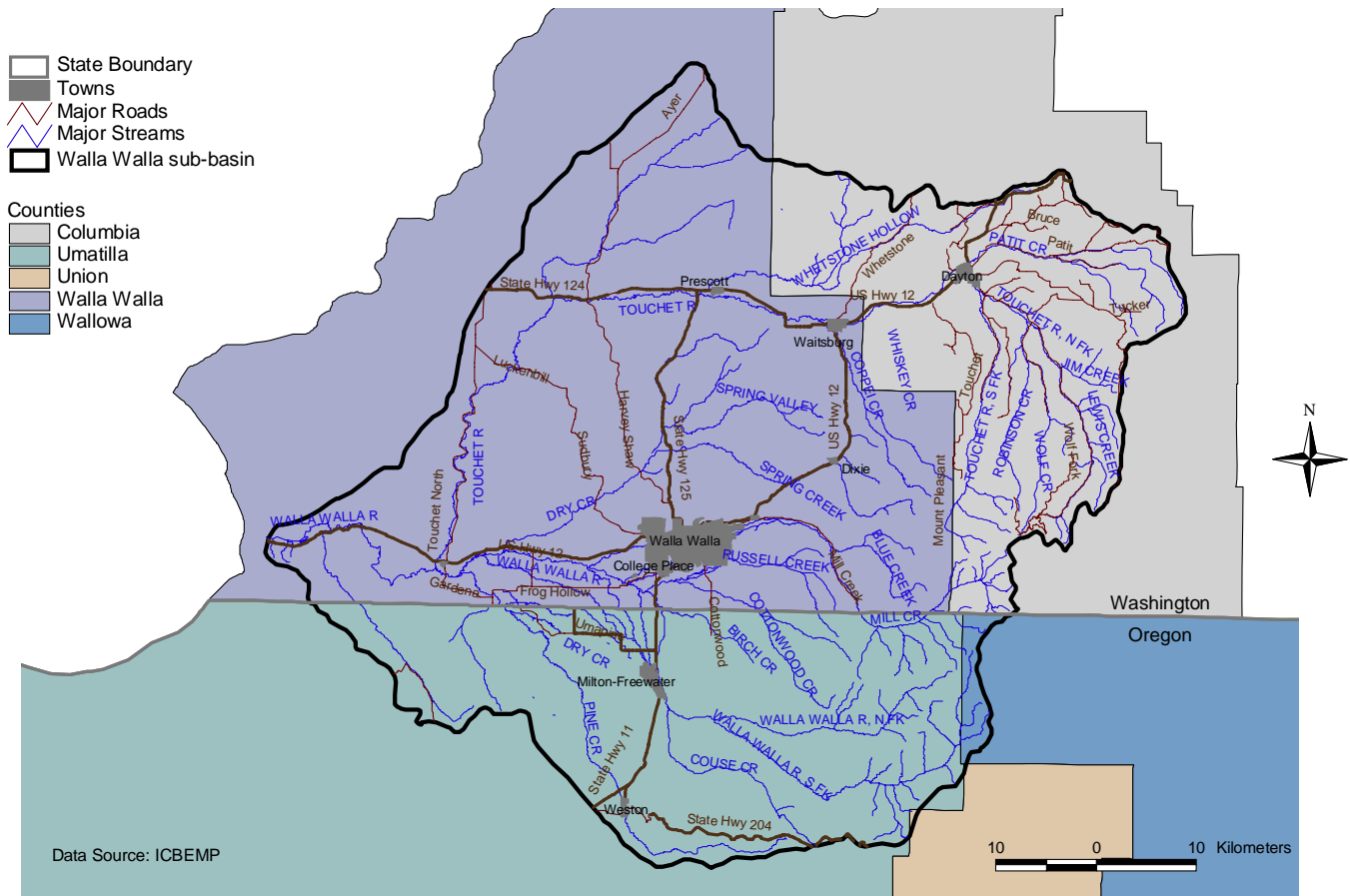


Figure 1. Map of the Walla Walla subbasin.

1.3) Listed salmon and steelhead affected within the Fishery Management Area specified in section 1.2.

The only known ESA listed steelhead affected within this Walla Walla River FMEP are Walla Walla summer steelhead of the Middle Columbia River DPS, and Snake River DPS summer steelhead. Hatchery summer steelhead from Washington LSRCP releases in the Walla Walla River, and Snake River may co-mingle with natural populations in this FMEP area.

The extent wild adult Umatilla, Deschutes or John Day summer steelhead stray into the Walla Walla River is unknown. However, it is unlikely that this occurs to any significant level due to

the low flows and high water temperatures at the mouth of the Walla Walla River during the primary adult immigration period in the Columbia River (June – August).

1.3.1) Description of “critical” and “viable” thresholds for each population (or management unit) consistent with the concepts in the technical document “Viable Salmonid Populations and the Recovery of Evolutionarily Significant Units.”

Critical and viable threshold values as described by McElhany et al. (2000), could not be fully estimated in the Oregon portion of the Walla Walla subbasin due to lack of sufficient time series data for the population in question (Table 1). Further, the current carrying capacity or production potential for summer steelhead in the Oregon portion of the Walla Walla subbasin is unknown. The Walla Walla Subbasin Natural Production Monitoring and Evaluation Project implemented by the CTUIR will provide information to assist in making these determinations in the future. Additionally, data gathered during the term of this FMEP will allow managers to more accurately and precisely estimate critical and viable threshold values.

In the absence of these definitive data, it is possible; however, to use other information to define interim critical and viable thresholds. ODFW is comfortable with this interim approach for several reasons. First, the Nursery Bridge Dam makes it possible to count returning adult steelhead and develop reasonable estimates of total escapement. This removes uncertainty surrounding other enumeration techniques such as redd counts. Second, comparison can be made with the neighboring Umatilla subbasin, which is very similar to the Walla Walla in many aspects. Third, there currently is no artificial production program in the Oregon portion of the Walla Walla subbasin and strays from the Washington LSRCP have averaged only 3.7% (range 0.5% - 7.2%) from 1993 to 2001. Historically, ODFW has removed all hatchery summer steelhead captured at the Nursery Bridge Dam and precluded them from naturally reproducing in the upper basin. The Washington Department of Fish and Wildlife has reduced the release of Lyons Ferry Hatchery summer steelhead from 170,000 to 125,000 annually due to improved survivals.

Even though insufficient data are available to calculate critical and viable threshold values for Oregon portion Walla Walla River summer steelhead, estimates of total escapement exist annually since 1993. Estimated escapement of wild summer steelhead above Nursery Bridge Dam ranges from 279 to 815 and averages 483 for the period of record (Table 1). These escapement estimates are important to consider when discussing the following proposed viable and critical thresholds.

Table 1. Estimated Escapement of adult summer steelhead above the Nursery Bridge Dam fish trap on the Walla Walla River 1992-93 through 2003-04 run years. Escapement estimates are based on recapture of marked fish, as some fish are able to bypass the trap. Trapped hatchery fish were sacrificed 1992-93 through 1998-99 run years.

Run Year	Wild /1	Hatchery /1	Total
1992-93	815	2	817
1993-94	535	1	536
1994-95	430	5	435
1995-96	358	7	365
1996-97	292	5	297
1997-98	378	3	381
1998-99	279	1	280
1999-00	514	13	527
2000-01	744	36	780
2001-02	NA	NA	1205 /2
2002-03	NA	NA	/3
2003-04	NA	NA	/4
2004-05	NA	NA	733 /2
2005-06	NA	NA	625 /2
Average	483	8	582

/1 Due to new counting procedures implemented in 2001, differentiation between hatchery and wild fish was not possible.

/2 Escapement is based on actual count as fish are no longer able to Pass over the dam.

/3 Complete data is not available for the 2002-03 run year.

/4 Complete data is not available for the 2003-04 run year.

With the safeguards discussed above as a backstop, ODFW has utilized a comparison with summer steelhead returns to the Umatilla River as the basis for developing viable and critical thresholds for the Oregon portion of the Walla Walla subbasin. The ODFW believes this is a prudent approach due to the close proximities of the basins and their similar physical characteristic and land use patterns. If anything, the spawning and rearing habitat currently used in the Walla Walla subbasin is of higher quality than that of the Umatilla subbasin.

As a basis of comparison, an estimate of the number of summer steelhead escaping to spawn per mile of documented spawning habitat was developed for each the Walla Walla and Umatilla subbasins (Table 2). The estimated miles of spawning habitat were derived from ODFW's GIS maps of known summer steelhead distribution. From these maps, the Umatilla is documented to have 220 miles of summer steelhead spawning habitat and the Walla Walla 54.75. To develop spawners per mile, the escapement of spawners (dam counts minus broodstock collection and harvest) were divided by the miles of spawning habitat. Spawners per mile on the Walla Walla ranged from 5.1 to 14.9 with an average of 8.2 and the Umatilla ranged from 3.6 to 9.3 with an average of 5.0 (Table 2).

Table 2. Spawners per mile of documented spawning habitat in the Umatilla and Oregon portion of the Walla Walla subbasins, run years 1992-93 through 1999-00.

Run Year	Spawners Per Mile	
	Walla Walla	Umatilla
1992-93	14.9	5.3
1993-94	9.8	3.9
1994-95	7.9	3.6
1995-96	6.5	5.4
1996-97	5.3	4.1
1997-98	6.9	3.5
1998-99	5.1	4.6
1999-00	9.4	9.3
Average	8.2	5.0

The significantly lower average spawners per mile in the Umatilla subbasin is likely due to the fact that average quality of habitat is better in the Walla Walla subbasin than the Umatilla subbasin. There are many miles of marginal habitat (small intermittent streams) in the Umatilla subbasin, whereas most of the spawning habitat in the Walla Walla subbasin is on the Walla Walla River and the North and South forks.

The spawners per mile data were used as a means of translating viable and critical thresholds for the Umatilla subbasin into thresholds for the Walla Walla subbasin. For each subbasin, spawners per mile were plotted against the spawning escapement so that known escapement values could be translated into spawners per mile or vice versa (Figures 2 and 3). Chilcote (2001) developed estimates of seeding levels and the viable and critical thresholds for the Umatilla subbasin (Table 3). These were converted to spawners per mile by using the equation $y = 0.0045x + 0.0164$ obtained from the trend line for the relationship between Umatilla spawner escapements and spawners per mile (Figure 2). On average, spawners per mile estimates for the Walla Walla subbasin were 60% greater than those for the Umatilla subbasin, for the same period of time (Table 2). To develop seeding levels and critical and viable thresholds for the Walla Walla, Umatilla spawners per mile equivalents were multiplied by 1.6. Finally, to derive Walla Walla adult spawning escapement for seeding levels and thresholds, the equation $y = 0.0184x - 0.1211$ was used from Figure 3. Seeding levels and thresholds are shown in Table 4.

The public review draft (March 2001) of this FMEP specified critical and viable abundance thresholds as shown below in Table 4 below. Upon further discussions with NOAA Fisheries, our critical thresholds were lower than NOAA Fisheries was comfortable with as “trigger points” to further reduce fishery impacts when wild steelhead populations declined to critically low levels. Based on the guideline in McElhaney et al (2000), the viable thresholds were more aligned with NOAA’s intentions for critical thresholds. Therefore, “Viable” threshold levels identified in the original FMEP were reclassified to “Critical Fishery Conservation Thresholds” and included in Table 4 of this revised FMEP. Subsequent discussions of “viable” and critical thresholds refer to population thresholds listed in Table 4, with the recognition that for fishery

conservation triggers, the critical threshold recommended by NOAA Fisheries (111 6-year average wild steelhead abundance) will be used.

Table 3. Observed 6-year average wild steelhead abundance, conservation abundance thresholds and pattern of annual fluctuations for Umatilla wild steelhead expressed as total spawners from Chilcote (2001).

Population	Full Seeding	50% Seeding	Viable Threshold	Critical Threshold	Recent 6-yr Average
Umatilla	1666	833	333	140	1247

Table 4. Interim conservation abundance thresholds for wild steelhead escaping to the Oregon portion of the Walla Walla subbasin expressed as total spawners. Also included is the Critical Fishery Conservation Threshold recommended by NOAA Fisheries.

Population	Full Seeding	50% Seeding	Population Viable Threshold	Population Critical Threshold	Critical Fishery Conservation Threshold
Walla Walla	658	338	111	61	111

This fishery management plan focuses primarily on abundance and productivity, which are the two key performance features most directly affected by fishery impacts of the scale we propose. Spatial structure is generally a function of habitat size and distribution. Proposed fisheries do not affect habitat. The small fishery impact rates proposed (<2%) also will not reduce population sizes to levels where spatial effects are exacerbated. Diversity concerns for Walla Walla summer steelhead are primarily related to the effects of natural spawning by hatchery fish from the Washington LSRCP steelhead program. The small, proposed fishery impact rates on wild fish are not expected to exert sufficient selection pressure on any single characteristic to affect diversity.

1.3.2) Description of the current status of each population (or management unit) relative to its “Viable Salmonid Population thresholds” described above. Include abundance and/or escapement estimates for as many years as possible.

From the 1992-93 run year to 2000-2001, adult steelhead returning to the Oregon portion of the Walla Walla River were counted by direct observation/handling at the Nursery Bridge Dam adult trapping facility in the west bank fish ladder. In 2001 a new ladder was constructed at Nursery Bridge Dam on the East bank of the river. Beginning with the 2001-02 run year fish were enumerated at the viewing window in the new ladder. However, due to inadequate visibility, marks are not able to be distinguished. Thus differentiation of wild and hatchery fish has not been possible. The Nursery Bridge Dam is approximately four miles upstream of the

Oregon/Washington state line. Therefore, all but four miles of the spawning habitat in Oregon is above this point, except Birch and Cottonwood creeks which headwater in Oregon, but enter the Walla Walla downstream of the Nursery Bridge fish trap in Washington. The west bank Nursery Bridge Dam trapping facility is located in the fish ladder that provides fish passage over the dam. During the period this was used, some steelhead were able to jump the

Figure 2. Relationship of spawning escapement to spanwers/mile of spawning habitat for summer steelhead in the Umatilla basin.

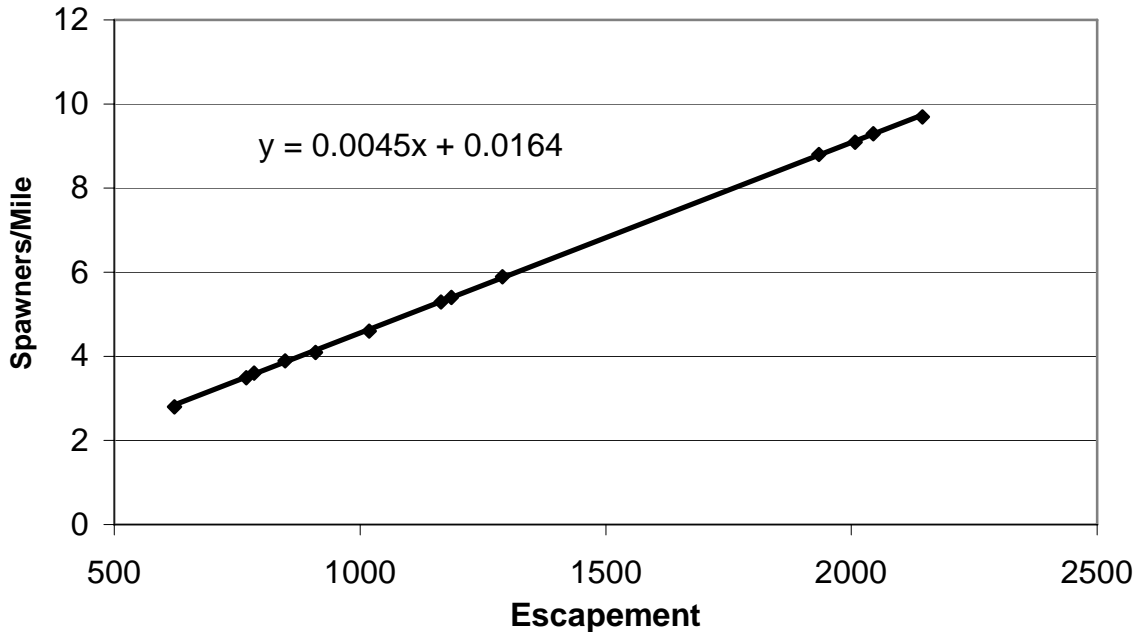
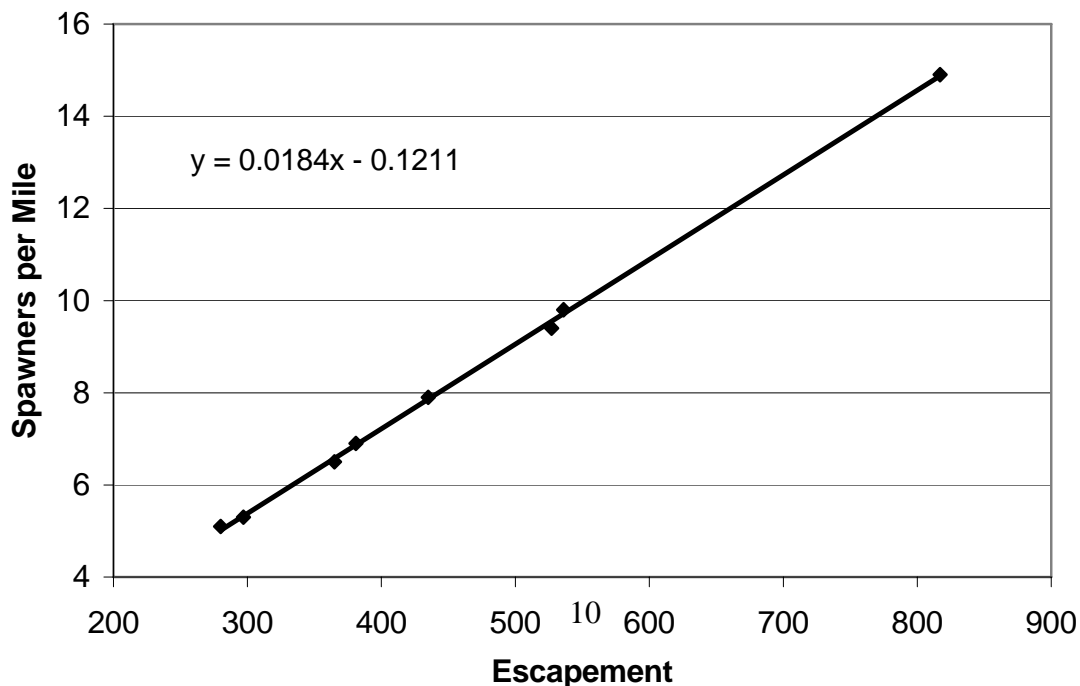
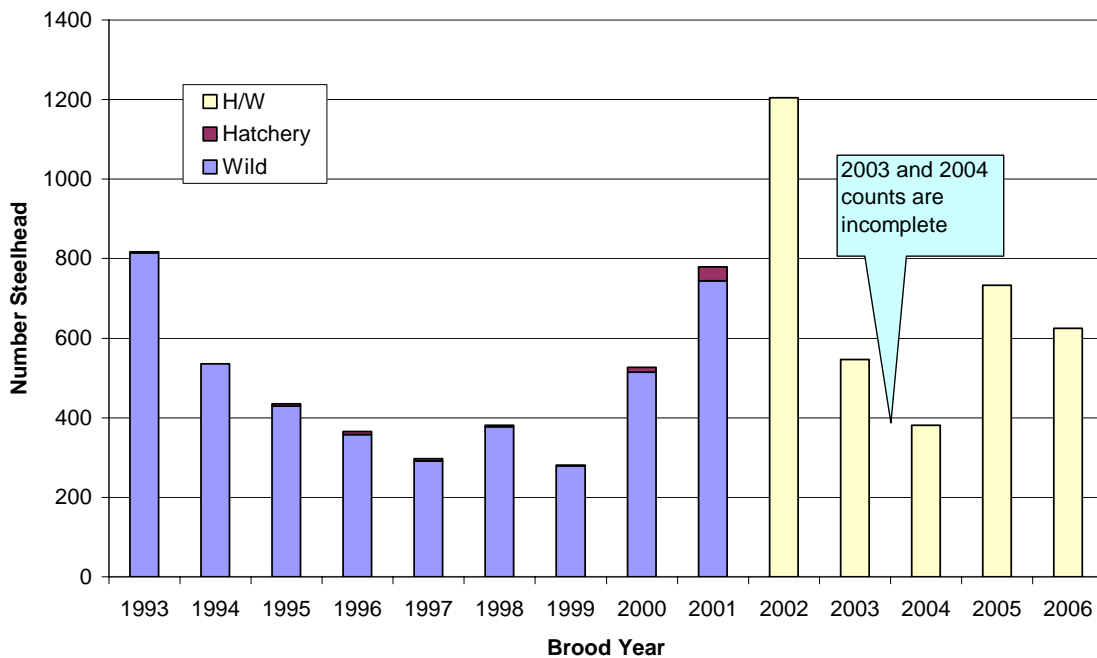


Figure 3. Relationship of spawning escapement to spawners/mile of spawning habitat for summer steelhead in the Walla Walla basin.



dam rather than using the ladder, so the trap count does not reflect total escapement. In order to develop an estimate of total escapement, adult steelhead collected in the trap were marked. Outmigrating kelts were recovered at different locations in the river. The ratio of marked to unmarked recovered kelts was used to develop an estimate of total escapement to the Oregon portion of the Walla Walla River. When the new fish ladder was constructed in 2001, repairs were made to the dam that make it impossible for adult steelhead to jump the dam. Thus counts made in the ladder are now “total” counts of fish escaping upstream. While the video taping system currently used at the viewing window does not provide sufficient clarity to differentiate marked and unmarked fish, it is hoped that improvements can be made in the near future to correct this problem.

Figure 4. Escapement of steelhead above Nursery Bridge Dam, Walla Walla River, 1993 - 2006



Since the 1992-93 run year, adult escapement to the Oregon portion of the Walla Walla subbasin has been well above the interim viable threshold (Table 1 and Figure 4).

The Interior Columbia Technical Recovery Team (ICTRT) was charged by NOAA Fisheries to delineate historical steelhead populations within the MCR steelhead DPS and to develop viability criteria for recovery of the populations and the DPS. The ICTRT identified two populations within the Walla Walla River basin: Touchet River, and Walla Walla River (ICTRT 2005). The Walla Walla River population includes all natural origin steelhead in tributaries to the Walla Walla River excluding the Touchet River. The area considered in this FMEP is a part of this population. The ICTRT also categorized the populations based on the size of historic spawning habitat, and identified the minimum population abundance thresholds for those categories. The

Walla Walla River population was considered to be Intermediate in size with a minimum abundance threshold of 1,000 adults (ICTRT 2005).

1.4) Harvest Regime

1.4.1) Provide escapement objectives and/or maximum exploitation rates for each population (or management unit) based on its status.

As indicated above, one of the performance indicators for Oregon population in the subbasin is the escapement of adult wild spawners. **The escapement goal is a 6-year rolling average of at least 220 wild steelhead above Nursery Bridge Dam.** This is set at approximately 2-times the interim viable population's threshold of 111(now the Critical Fisheries Conservation threshold). Doubling the viable population threshold is used as an acceptable and conservative margin of safety. For a long-term goal, an escapement of 658 wild fish is desired for the Walla Walla. However, if substantial improvements in juvenile steelhead habitat capacity and mainstem Columbia passage are achieved, the restoration goal stated in the draft Walla Walla Subbasin Summary (NWPPC 2001) of 1,500 fish may be attainable.

Based upon PVA simulations of estimated extinction probability for 27 steelhead populations in Oregon, Chilcote (2001) recommended a maximum fishery mortality rate for most wild steelhead populations of 20%. The fisheries strategies proposed in this plan will not exceed this limit.

Within the Walla Walla, it is estimated the proposed fisheries will result in a mortality rate of approximately 1.5% on the wild population. This estimate is based on an assumed post-release mortality rate of 5% (from Hooton 1987) and a maximum fishery interception rate for the wild population of 30%.

Creel surveys conducted by the WDFW from 1997 to 2000 indicate that approximately 27% of the steelhead caught during the Washington Walla Walla basin recreational steelhead fisheries are wild steelhead. Because there are currently no estimates of total wild steelhead escapement to the entire Walla Walla basin, these creel data cannot be used to determine the catch rate of wild fish. However it does indicate that significant numbers of wild fish are caught. The WDFW (2001) estimates that on average 438 are caught in their steelhead fishery resulting in an estimated mortality of 22 wild adults.

The best available scientific information suggests hook and release mortality of adult steelhead is low. Hooton (1987) found catch and release mortality of adult steelhead to be 3.4% (n = 3,715 fish) on average when using a variety of fishing tackle, including barbless and barbed hooks, bait and artificial lures. Hooton (1987) concluded that catch and release of adult steelhead was an effective mechanism for maintaining angling opportunity without negatively impacting stock recruitment. Reingold (1975) showed adult steelhead hooked, played to exhaustion, and then released, returned to their target spawning stream as well as steelhead not hooked and played to exhaustion.

However, these studies were conducted when water temperatures were relatively cool. Catch and release mortality of steelhead is likely to be higher if the fishery occurs during warm water conditions. In a study conducted on the catch and release mortality of steelhead in a California river, Taylor and Barnhart (1999) reported over 80% of the observed mortalities occurred at stream temperatures greater than 21 degrees C.

The steelhead fishery for the Oregon portion of the Walla Walla River is for the period December 1 through April 15. The upper mainstem Walla Walla River, which is known for its excellent water quality, does not exceed 21 degrees C during this time period. Only the portion between the State line and Nursery Bridge Dam exceeds this at any time during the year.

1.4.2) Description of how the fisheries will be managed to conserve the weakest population or management unit.

Steelhead

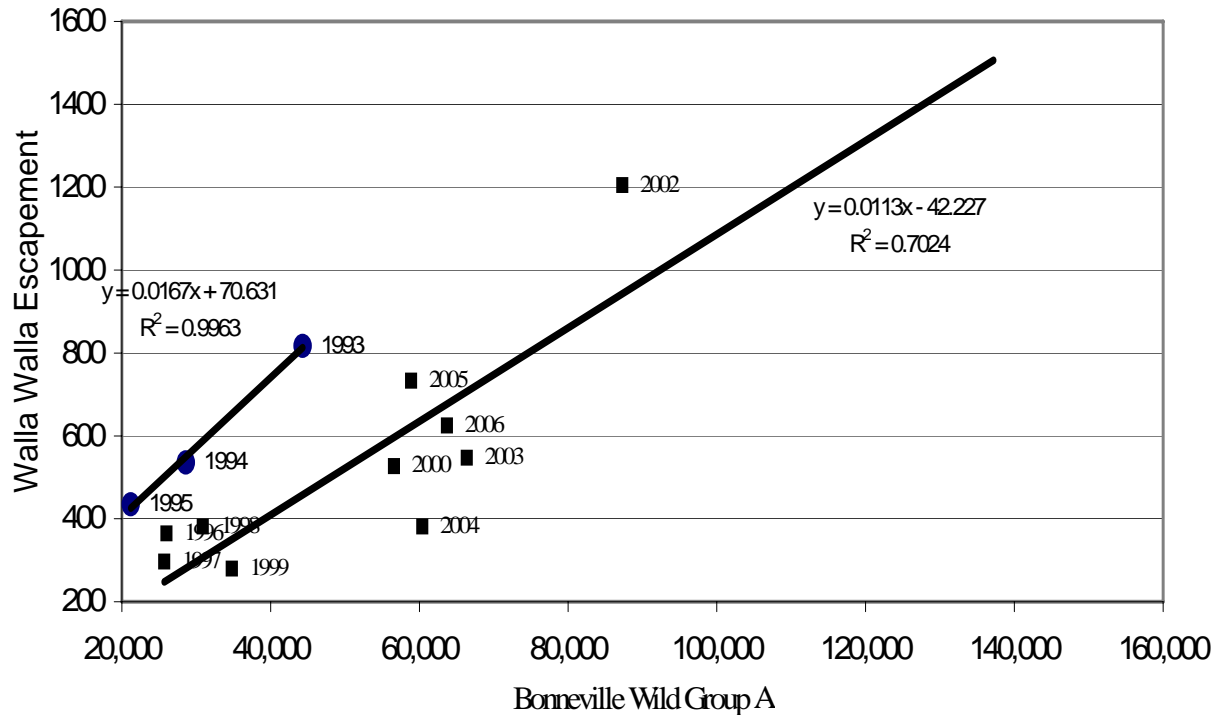
To protect wild steelhead in the Oregon portion of the Walla Walla subbasin selective fisheries steelhead regulations will be maintained. Consumptive harvest of steelhead will be limited to hatchery origin steelhead and harvest of wild steelhead is not anticipated in the foreseeable future.

The Walla Walla selective steelhead fishery allows a consumptive fishery for hatchery origin steelhead but requires the release of all wild origin steelhead. This fishery will be managed based on the six-year rolling average. As long as the rolling average wild spawner escapement is above 220, the current fishery regime will be maintained. However, the trend of wild steelhead will be monitored and evaluated annually. If there is a downward trend of wild adult steelhead below the objective of 220, the fishery can be modified to reduce impacts. Possible adjustments could be gear restrictions, restriction of the open area and/or season length.

There is also a process to make in-year adjustments to fisheries when returns approach the Critical Fisheries Conservation thresholds. In order to make reasonable predictions for steelhead returns to the Walla Walla River, we have developed a regression of Bonneville wild Group A summer steelhead counts and wild steelhead counts at Nursery Bridge Dam (Figure 5). This regression will be used to develop a steelhead return estimate for the Walla Walla Annual Operation Plan in order to provide managers with a forecast model. As discussed above, the fishery will be managed based on a rolling six-year average. However, the Bonneville predictive tool will also be used to adjust fishery management within-year if escapements are expected to approach and/or go below the Critical Fisheries Conservation threshold.

As seen in Figure 5, the data show two time series trends that are quite distinct. The years 1993 through 1995 plot higher and result in a steeper trend line than do data from 1996 to 2006. While we do not currently have a hypothesis for the apparent shift in population productivity in relation to the total wild Group A summer steelhead run, it is distinct enough that we will use it for developing run predictions. To develop a conservative run estimate, the data and trend line from 1996 to 2000 will be used to develop in-year run forecasts based on wild Group A returns to Bonneville. This seems a prudent approach since this is the most current trend.

Figure 5. Relationship of Bonneville Dam wild Group A steelhead counts to estimated escapement above Nursery Bridge Dam, Oregon for run years 1992-93 through 1999-00.



Trout

Significant protection for juvenile steelhead and bull trout is also being provided under the current fisheries regulations. Fisheries for redband trout in the Walla Walla subbasin have been adapted to protect wild *O. mykiss* in natural production areas. The Walla Walla River and tributaries have been restricted to the use of flies and lures only since 1999 and the South Fork since 1996.

The redband trout fishery is open from the fourth Saturday in May to October 31 with an eight-inch minimum length in order to minimize angling impacts on adult steelhead spawners and outmigrating smolts. The fishery through the summer and fall is then likely focused on resident trout (eight-inch minimum length) rather than younger fish, which could be either resident or anadromous juveniles.

Legal-sized hatchery rainbow trout have been historically stocked in many streams throughout the Walla Walla subbasin. In 1994, all stocking of hatchery rainbow trout was discontinued in

streams within the Oregon portion of the Walla Walla subbasin to protect wild stocks of *O. mykiss* and bull trout.

Potentially, the most significant effect of releasing catchable trout in rearing areas of listed steelhead is the inadvertent harvest of juvenile steelhead in catchable trout fisheries. Cramer et al. (1997) observed that the release of catchable trout attracts anglers to release locations and that harvest rates of juvenile steelhead are generally proportional to angler effort. In a study of effects to juvenile steelhead from catchable trout fisheries in the Wenatchee River, Washington, Don Chapman Consultants (1989) concluded that sport anglers remove 61% to 87% of wild steelhead longer than 125 mm and kill 2% to 28% of steelhead larger than 100 mm by hook and release. Furthermore, it was found that anglers harvest 72% to 91% of the hatchery rainbow trout soon after they are stocked.

Cramer et al. (1997) noted that this quick removal of hatchery trout leaves only juvenile steelhead as the targets for fishermen attracted by the reports of high angler success. This observation is supported by Don Chapman Consultants (1989) finding that “although catchable trout did not displace wild steelhead by direct interaction for space, hatchery trout attracted anglers that killed a large fraction of the juvenile steelhead in the river.” Their underwater observations also indicated that wild steelhead were more susceptible to angling than hatchery trout because steelhead reacted faster to lures and bait. Pollard and Bjornn (1973) made similar observations, noting in a study on the Crooked Fork of the Lochsa River, Idaho, that most of the larger juvenile steelhead trout present in the retention area of the river were caught at a faster rate than the smaller age 1 steelhead and the hatchery trout given the same level of effort.

Fisher (1961, as described by Cramer et al. 1997) surveyed angler effort in the Big Sur River, California, observing that anglers caught an estimated 90% of the catchable trout released, but wild trout made up 24% of total catch. The angler catch of wild fish was 7 times greater than the number of wild fish counted as outmigrants to the river during the same period. This experiment was conducted during the peak spring migration period for steelhead smolts. All these studies show that natural steelhead are more susceptible to angling than catchable trout when the two are present together and that angler effort is directly related to the presence of catchable trout releases. These studies lead to the conclusion that removing the catchable trout program from the Walla Walla River will benefit ESA listed steelhead.

Fishing effort is currently much lower than in previous years because of the elimination of hatchery catchable trout stocking in the Walla Walla River and the conservative, selective fishing regulations currently in place. It is difficult to quantify the impacts to juvenile steelhead from sport fishing because of the lack of information specific to the Walla Walla River. However, given the current regulations that are in place for juvenile steelhead, the dispersed nature of the fishery and cessation of trout stocking, it is estimated that <1% of rearing juvenile steelhead in the Walla Walla River subbasin are caught and released in the trout fishery.

Due to cool water temperatures, warmwater gamefish do not exist in fishable numbers in the Oregon portion of the Walla Walla subbasin.

1.4.3) Demonstrate that the harvest regime is consistent with the conservation and recovery of commingled natural-origin populations in areas where artificially propagated fish predominate.

As stated earlier, no hatchery steelhead or trout are released into the Walla Walla subbasin in Oregon. The proposed fishery will be managed as catch and release of wild steelhead, but will also allow harvest of stray fin-clipped hatchery fish, most of which are strays from the Washington LSRCP program in the lower Walla Walla subbasin. Harvest of wild summer steelhead will not be allowed. Gear, seasons and sanctuary area restrictions, as well as a consistent high level of fishery law enforcement all work to minimize the loss of juvenile and adult wild steelhead. Hatchery steelhead in the Walla Walla subbasin have been deemed by NMFS to be not essential to the survival of the wild Walla Walla steelhead.

1.5) Annual Implementation of the Fisheries

The Oregon Fish and Wildlife Commission (Commission) adopts angling regulations every year with an extensive public involvement process every four years. This process begins about one year in advance of when specific regulations are actually adopted.

Numbers of steelhead returning to the Walla Walla subbasin can be estimated by determining the number of wild A-run steelhead passing over Bonneville Dam. This relationship has been described in Section 1.4.2. of this plan. These estimates are available by the end of August each year, which is usually at least a month prior to significant numbers of steelhead entering the Walla Walla River. If estimates of wild A-run steelhead counted at Bonneville Dam indicate additional conservation measures are necessary, then emergency regulations further restricting fisheries can be implemented.

There is also a process in place to implement regulations on a much shorter time schedule than every four years that addresses emergency conditions. These emergency regulations can be adopted by the Commission within 2 weeks if a Commission meeting is scheduled near the same date. The Commission has also delegated to the Director of ODFW the authority to adopt emergency regulations. If the Director adopts emergency regulations, they can be implemented within a matter of days from the time they are submitted.

SECTION 2. EFFECTS ON ESA-LISTED SALMONIDS

2.1) Description of the biologically based rationale demonstrating that the fisheries management strategies will not appreciably reduce the likelihood of survival and recovery of the affected ESU(s) in the wild.

The objective of the current harvest regime is to harvest hatchery origin steelhead in the Oregon section Walla Walla River and ensure that the catch and release fishery on wild steelhead is consistent with the recovery of listed populations in the Walla Walla subbasin. The conservative in-river harvest strategies described in this FMEP meet the objective of population recovery. Because the proposed fishery management strategies result in fishery mortality rates that are substantially less than the 20% maximum fishery mortality rate recommend by Chilcote (2001) for populations of steelhead in Oregon (<2% under catch and release regulations), the current fishery should not reduce the likelihood of survival and recovery of the affected population. Chilcote (2001) found that the probability of extinction for nearly all steelhead populations modeled throughout Oregon was found to be zero when harvest rates were restricted to 20% or less.

The harvest management strategy to limit the cumulative fishery on wild fish to less than 20% is expected to result in an acceptable level of risk based upon the recent information about this population presented in this plan. Specifically, the number of wild fish returning to the Walla Walla has remained greater than twice the interim viable threshold for the period of record. Therefore, it would appear that the conservative management strategy, presented in this FMEP would provide adequate protection to wild steelhead in the Walla Walla.

Because our understanding of the status of the Walla Walla steelhead population in the Oregon has significantly improved in recent years, opening a selective steelhead fishery along ten miles of the mainstem seems reasonable. The in-basin fishery is catch and release of wild fish in both Oregon and Washington. The estimated incidental mortality to wild fish from the selective fishery is expected to be relatively small (<2% of the population). Incidental mortality on the Umatilla River, which has an open area of approximately 56 miles, has been less than 2 percent since the catch and release fishery was implemented ODFW (2001).

2.1.1) Description of which fisheries affect each population (or management unit).

Walla Walla River fisheries in Oregon that affect listed Middle Columbia River DPS steelhead include the sport summer steelhead and redband trout fisheries.

The Walla Walla River steelhead fishery is directed at the catch and release of wild fish and harvest of stray hatchery steelhead. The season occurs from December 1 through April 15 and the area open to angling is from the Oregon-Washington state line upstream to the confluence of the North and South forks. The entire upper subbasin has been set aside as an adult steelhead sanctuary area and will remain closed to steelhead angling. The daily bag limit (3 fish/day) will be restricted to adipose fin-clipped steelhead only. Wild (non-finclipped) steelhead will be required to be released unharmed.

Redband trout angling in the Walla Walla subbasin where anadromous fish are present is open from the fourth Saturday in May through October 31. All waterways in the subbasin are open to fishing for redband trout during the appropriate season. There are no closed areas. All streams in the Oregon portion of the subbasin are restricted to the use of artificial flies and lures only. The daily bag limit is five fish over eight inches in length.

2.1.2) Assessment of how the harvest regime will not likely result in changes to the biological characteristics of the affected ESUs biological characteristics of the affected ESUs.

The current and proposed harvest regime for Walla Walla River steelhead and trout has not and will not result in changes to the biological characteristics of wild Walla Walla River steelhead. These characteristics have been and will continue to be monitored as part of the monitoring and evaluation portion as described in Section 3.1 of this FMEP. Regulations requiring catch and release of wild steelhead are proposed. Mortality to Walla Walla River wild steelhead by sport anglers, as a result of incidental hook and release mortality, will not affect the biological characteristics of the listed steelhead.

Any fisheries management strategy that includes harvest has both direct and indirect harvest. Direct harvest takes place when legally caught fish are retained as part of the daily limit. This FMEP does not propose direct harvest of wild steelhead in the Walla Walla River in the near term. This FMEP focuses on maintaining wild harvest rates that are consistent with recovery of the population. The small hook and release mortality rates to Walla Walla River steelhead covered under this plan are not expected to exert selective pressure on any single characteristic that will affect genetic diversity since both the existing and proposed fisheries would encompass most of the run-timing and be conducted on a mix of all the sub-populations. Therefore, the probability of changing biological characteristics is very small.

2.1.3) Comparison of harvest impacts in previous years and the harvest impacts anticipated to occur under the harvest regime in this FMEP.

Past harvest rates of adult steelhead in the Oregon portion of the Walla Walla River prior to the closure in 1995 are unknown. Cramer et al (1997) reviewed harvest rates of adult steelhead in sport fisheries in Oregon and Washington prior to wild release regulations and concluded that harvest rates on wild summer steelhead were in the neighborhood of 50%. Harvest rates in Walla Walla River could have been of this magnitude during some years. Since no harvest of wild steelhead is proposed under this FMEP, the only wild fish mortality will be an estimated 2% or less incidental hooking mortality associated with the proposed catch and release fishery.

Past harvest impacts to juvenile steelhead as a result of trout fisheries in the Walla Walla River are unknown. Cramer et al (1997) were of the opinion that the greatest sport harvest of steelhead in recent times may have been on juveniles taken in trout fisheries, rather than on adults. This was likely the case in Walla Walla River considering the regulations and management practices in place for many years. For example, the Harris Park area on the South Fork Walla Walla, believed to be an important summer steelhead spawning and rearing stream, was stocked with

catchable trout until 1994. Natural bait was also allowed for trout fishing in this reach of river until after 1997 when bait was banned.

The more restrictive angling regulations presently in place for trout and the cessation of all trout stocking in the Walla Walla River after 1994 provides significantly greater protection to juvenile steelhead from angling mortality than occurred historically. Angling regulations currently in place (artificial flies and lures only) also result in much lower harvest impacts for adult steelhead than past regimes.

2.1.4) Description of additional fishery impacts not addressed within this FMEP for the listed ESUs specified in section 1.3. Account for harvest impacts in previous year and the impacts expected in the future.

Other fisheries that could impact total mortality of Walla Walla River steelhead include steelhead sport fisheries in the Washington portion of the Walla Walla, Zone 6 Columbia River treaty fisheries and sport fisheries in the Columbia River downstream from the Walla Walla River – Columbia confluence. Zone 6 Treaty Indian catch of wild Group A steelhead averaged 5.4% from 1998- 2002. An agreement has been reached with the treaty tribes fishing in Zone 6 to limit harvest of steelhead in the Zone 6 fishery to less than 15% (ODFW 2000). The combined Zone 6 treaty and mainstem Columbia sport fishery mortality averaged 6.9% from 1998 through 2002.

The additive harvest rate of the Zone 6 Indian fishery, Columbia River sport fishery and Walla Walla sport fishery would be below the target 20% for Walla Walla wild fish under this management scenario (Table 5). The Columbia River and Washington Walla Walla steelhead sport fisheries require all wild steelhead caught to be released unharmed.

Table 5. Estimated total harvest mortality (percent) on wild Walla Walla summer steelhead based on actual Zone 6 Treaty Indian Catch of Wild Group A steelhead and assuming , maximum 1.5% harvest mortality from Columbia river sport fisheries and a 1.5% in-basin mortality.

Year	Tribal Zone 6 (%)	Col. River Sport (%) ^{\1}	Walla Walla Sport (%)	Total
1993	15.2	1.5	1.5	18.0
1994	10.3	1.5	1.5	13.1
1995	10.4	1.5	1.5	13.2
1996	8.9	1.5	1.5	11.7
1997	10.4	1.5	1.5	13.2
1998	8.8	1.5	1.5	11.6
1999	7.6	1.5	1.5	10.6
2000	3.7	1.5	1.5	6.6
2001	4.0	1.5	1.5	6.9
2002	2.7	1.5	1.5	5.6
Average	8.2	1.5	1.5	11.1

^{\1} The Walla Walla in-basin maximum harvest mortality objective.

SECTION 3. MONITORING AND EVALUATION

3.1) Description of the specific monitoring of the “Performance Indicators” listed in section 1.1.3.

The Walla Walla Fish Passage Operations Project (BPA funded Project, CTUIR is the project sponsor) monitors the return of steelhead runs to the Walla Walla at Nursery Bridge Dam. Steelhead are currently enumerated by video taping at the viewing window in the new ladder completed in 2001. This activity is expected to continue into the foreseeable future. The entire steelhead run will be enumerated.

3.2) Description of other monitoring and evaluation not included in the Performance Indicators (section 3.1) which provide additional information useful for fisheries management.

Natural Production M&E (CTUIR): This project evaluates the natural production of salmon and steelhead in the Walla Walla River Subbasin. Natural production monitoring began in the Oregon portion of the subbasin in 1999. This project will monitor spawning of adult salmon, steelhead and bull trout, juvenile abundance and distribution and habitat quality and quantity in the Oregon portion of the subbasin.

Walla Walla Subbasin bull trout and steelhead telemetry study: Over the next several years a joint effort of the ODFW, CTUIR, WDFW, Walla Walla Basin Watershed Council and several Walla Walla irrigation districts will seek to better understand movement patterns and spawning areas of bull trout and summer steelhead in the entire Walla Walla subbasin.

The WDFW is carrying out a number of monitoring and evaluation projects in the Walla Walla basin that will assist in better understanding the Walla Walla subbasin summer steelhead population.

3.3) Public Outreach

Anglers will be informed of fishery seasons and bag limit changes through:

- The Oregon Sport Fishing Regulations Pamphlet published each December.
- Signs at public access points along the Walla Walla River.
- “Emergency Notice” flyers distributed to license vendors, district ODFW offices and on the ODFW web site.
- Regional Newspapers and radio stations.

Anglers are also informed of regulation changes through the public meeting process to develop regulations, through creel checkers, Oregon State police and office inquiries. Oregon State Police patrols indicate a high compliance rate with steelhead angling regulations.

3.4) Enforcement

The Fish and Wildlife Division of the Oregon State Police (OSP) is responsible for the enforcement of fish and wildlife regulations in the State of Oregon. The Coordinated Enforcement Program (CEP) is a program designed to coordinate effective enforcement by ensuring the development of enforcement priorities and plans by and between OSP enforcement officers and ODFW biologists. Other parties such as Tribes, United States Forest Service enforcement officers, local landowners, angling club representatives, and interested citizens are invited to participate in annual meetings to develop enforcement priorities. This involvement is critical as perspectives of user groups and other enforcement bodies are incorporated in the decision making process. ODFW Fish biologists set conservation needs as the highest enforcement priorities.

At coordination meetings, OSP officers share the previous year’s results (compliance rates, compliance problems) with ODFW Biologists to assist in improving effectiveness and to assist in the development of angling regulations. All angling regulations developed by ODFW biologists are reviewed by OSP fish and wildlife officers to insure that the regulations are enforceable and can be done so effectively and efficiently.

Through standard enforcement patrols, OSP officers become aware of possible conservation problems (example: illegal harvest of a sensitive species during a season for other species).

These issues are discussed at coordination meetings and strategies developed for solving the problem (development of enforcement strategies and/or development of angling regulation proposals).

3.5) Schedule and process for reviewing and modifying fisheries management.

3.5.1) Description of the process and schedule that will be used annually to evaluate the fisheries, and revise management assumptions and targets if necessary.

Fisheries and management assumptions discussed in this plan will be evaluated each year by Umatilla District staff in consultation with appropriate Portland Headquarters and CTUIR staff. The above-discussed suite of monitoring activities will provide adequate data at a sufficient level of detail to evaluate whether this plan is accomplishing the stated objectives.

3.5.2) Description of the process and schedule that will occur every 5 years to evaluate whether the FMEP is accomplishing the stated objectives. The conditions under which revisions to the FMEP will be made and how the revisions will likely be accomplished should be included.

A revision of this FMEP will be initiated after completion of Mid Columbia River Steelhead ESU Conservation/Recovery Plan. One of the preliminary steps in completion of this conservation plan is development of ODFW's Oregon Native Fish Status Report (completed in 2006), which evaluates Species Management Units (SMU) to specific "Interim Criteria". These criteria include an assessment of population distribution (comparison of existing to historical number of populations, population distribution, (percentage of historical range occupied), population abundance, population productivity, reproductive independence, and hybridization. ODFW's Stock Status Report includes information on the Umatilla River summer steelhead population. It is likely that criteria in the Conservation/Recovery Plan will differ somewhat from interim criteria used in ODFW's Oregon Native Fish Status Report but will incorporate criteria that address conservation and recovery issues.

It is anticipated that ODFW will complete Mid Columbia River Steelhead DPS Conservation/Recovery Plan within the five-year FMEP evaluation time-period. This conservation plan will include updates to steelhead population and fishery monitoring parameters listed in this FMEP as well as updates to the Population Viability Analysis. It is expected that the revised FMEP will incorporate all of Oregon's summer steelhead populations within the mid Columbia River Summer Steelhead ESU (Deschutes, Umatilla, Walla Walla, and John Day rivers). Revisions to mid Columbia FMEPs will also incorporate elements of the Interior Columbia Basin Technical Review Team Report on the Viability Criteria for Application to Interior Columbia Basin Salmonid ESU/DPSs (ICTRT July, 2005). A significant portion of the ICTRT's viability assessment methodology is included in ODFW's Native Fish Conservation Policy interim criteria.

Subsequent comprehensive reviews of the Mid Columbia River Summer Steelhead FMEP will be conducted every five years. Brood year survival for wild summer steelhead in the Walla Walla River can be assessed during this five year period, given average lengths of summer steelhead freshwater and ocean residency. Comprehensive reviews will be repeated at that interval until such time as the ESU is declared recovered and is de-listed. Revisions to the Walla Walla River component of the Mid Columbia River Summer Steelhead FMEP will be made as performance indicators suggest that the stated objectives are not being met. Revisions will be undertaken in cooperation with appropriate ODFW Fish Division and Region staff, NMFS staff, the interested public and our tribal co-managers. The Technical Review Team will be consulted during the periodic review process. Revision of FMEP will include changes and updates in the Population Viability Analysis and viable and critical thresholds.

This FMEP was initially submitted in March of 2001 and has been pending NOAA Fisheries review and approval. This revised FMEP includes some of the changes requested of NOAA Fisheries but do not include updates to population or fishery monitoring data sets. These updates and re-assessments of population viability will be included in Conservation Plans developed as part of Native Fish Conservation Policy Implementation. Given the estimated current low impact rates for the existing steelhead fishery in the Walla Walla River sport fisheries (1.5%) and mainstem Columbia River sport (1.5%) and Tribal Zone 6 fisheries (3.7%), it is unlikely that any re-assessment of these fisheries (using new data collected since this FMEP was originally submitted) will result in wild steelhead impacts rates that will exceed 20%. Also, the current selective steelhead fishery (adipose fin-marked) in the Walla Walla River is a valuable management tool to reduce the number of hatchery origin fish escaping to spawn.

SECTION 4. CONSISTENCY OF FMEP WITH PLANS AND CONDITIONS SET WITHIN ANY FEDERAL COURT PROCEEDINGS

The actions and objectives of this FMEP are subject to and consistent with the Columbia River Fish Management Plan (U.S. v Oregon). The Walla Walla Subbasin Salmon and Steelhead Production Plan (CTUIR and ODFW 1990) is the foundation document of Walla Walla River anadromous fish restoration efforts. This program (the planning documents) was developed cooperatively by the CTUIR and ODFW. Fish management and facility operation plans are set annually through the joint development of an annual operation plan (AOP).

This FMEP was developed by the ODFW. However, both CTUIR and ODFW play significant roles in fisheries management of the Oregon portion of the Walla Walla subbasin.

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